Phonetic and orthographic performance of Italian-Swiss German bilinguals: the case of obstruents and the features [±voice] and [±tense]

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Phonetic and orthographic performance of Italian-Swiss German bilinguals: the case of obstruents and the features [±voice] and [±tense]

Raffaele De Rosa and *Stephan Schmid*

Introduction

The study presented here is not concerned with second language acquisition in adults, but rather with the linguistic behaviour of bilingual adolescents. More specifically, it investigates the relationship between phonological and orthographic representations through the analysis of a corpus which consists of realisations of Italian obstruents. The empirical data were gathered in a writing and a reading task among a group of Italian children living in German-speaking Switzerland[1].

The point of departure for our research lies in some problems previously found in the oral and written Italian of immigrants' children, which are illustrated in Table 1[2].

The first two columns list the graphemic and phonemic representations of certain words in Standard Italian, whereas columns three and four show the deviations in both the writing and the pronunciation of the bilinguals.

The first two lines of table 1 exhibit an apparently random distribution of voiced and unvoiced plosives in the intervocalic context, in that the informants produce both voicing (or 'lenition' – cf. 3) and devoicing of the

1. Until now, researchers in our field have paid little attention to spelling and pronunciation among bilinguals. Among the exceptions, we might mention Berkemeier's (1996) study on the literacy of bilingual children in Greece, which, however, focuses mainly on the the acquisition of a second writing system, i.e. German orthography based on the Latin alphabet. Phonological aspects of spelling and pronunciation are dealt with more extensively in another recent study on the German of Greek children who remigrated to their home country (Hampel 2000).

2. In accordance with a widespread norm in linguistic literature, we use oblique bars // for phonological representations and square brackets [ ] for phonetic realisations. Analogously, single hooked brackets <> stand for graphemic representations of standard Italian, whereas double hooked brackets «» indicate graphetic realisations (in this case: the real spelling of our informants).

Table 1 - Examples of deviant spelling and pronunciation

	Graphemic representation (Standard Italian)	*Phonemic representation (Standard Italian)*	*Graphetic realisations in bilinguals*	*Phonetic realisations in bilinguals*
1.	<rapinatore>	/rapina'to.re/	«rabinatore»	[raḇina'to:re]
2.	<la bicicletta>	/la bitʃi'kletta/	«la picicleta»	[la pitʃi'kleːtːa]
3.	<attento>	/at'tɛnto/	«attendo»	[a'tːɛndo]
4.	<prende>	/'prɛnde/	«prente	['prɛnte]
5.	<sbaglio>	/'zbaʎʎo/	«spalio»	['sḇaʎːo]
6.	<giubbotto>	/dʒub'bɔtto/	«guboto»	[dʒu'bɔːto]
7.	<piace>	/'pjatʃe/	«piacce»	['pjatːʃe]
8.	<pioggia>	/'pjɔdʒdʒa/	«piocia»	['pjɔtʃa]

Standard Italian input. For instance, the realisations of the word <rapinatore> ("robber") show the pronunciation [ḇ] and the spelling «b» instead of the standard Italian phoneme /p/ and the corresponding grapheme <p>; conversely, in the case of <la bicicletta> ("the bicycle"), the underlying forms /b/ and <b> are realised phonetically and graphetically as [p] and «p», respectively.

As shown in lines three and four of table 1, the same contradictory behaviour between the two phonological processes of devoicing and voicing holds for plosives which occur after nasals. In the word <attento> ("attentive"), pronunciations and spellings such as [d] and «d» occur as realisations of standard Italian /t/ and <t>, but there are also [t] and «t» realisations of /d/ and <d> in the case of <prende> ("he/she takes").

The fifth line of table 1 serves to illustrate the fact that word-initial consonant clusters starting with a sibilant seem to favour devoicing, as in the case of standard Italian <sbaglio> ("mistake"), where the consonant cluster /zb/ is realised as [sḇ] and «sp».

A second issue related to the problem of voicing and devoicing is the treatment of geminates, which is shown in lines six and seven of table 1. Again, our subjects exhibit two different types of linguistic behaviour, for we find both the simplification of geminates and the doubling of singleton consonants. For instance, the double <bb> of <giubbotto> ("jacket") is pronounced as [b] and spelled as «b»[3]. Conversely, the singleton /tʃ/ in the

3. The spelling of <giubbotto> as «guboto» reveals another feature of Standard Italian orthography which may sometimes lead to difficulties in the informants' writing, namely the lack of biuniqueness between graphemes and phonemes. In fact, the phoneme /dʒ/ has two graphemic correspondents, i.e. <g> before mid and high front vowels (e.g. <gelato> "ice cream", <giro> "tour", etc.) and <gi> before /a/ and back vowels (<Gianni> "John", <giorno> "day", etc.). Thus, it is natural for an inexperienced person to use only one grapheme for the

Table 2 - A typology of bilingual phonological systems (accordin to Laeufer 1997)

Coexistent systems	*Super-subordinate systems*	*Merged system*
Separate phonological representation, independent phonetic realisation	L1 determines the encoding of L2 structures both in perception and in production	Single phonological system, two-member system at the phonetic level
Simultaneous acquisition in different contexts	Second language learning in formal settings	Simultaneous acquisition in the same context

word-form <piace> ("he/she likes") undergoes gemination in both the phonetic and the graphetic realisation: [tːʃ], «cc». In the last line of table 1, we see that degemination and devoicing may occur at the same time, since in <pioggia> ("rain"), the voiced geminate /dʒ.dʒ/ – graphemically <ggi> – is replaced by an unvoiced singleton and realised as [tʃ] or «ci».

The remainder of this paper is structured as follows: after a few preliminary reflections on the phonological systems of bilinguals (§.2), we will describe in greater detail the distribution of the features [±voice] and [±tense] in some varieties of Italian and German (§.3). Also, we will briefly characterise the sociolinguistic profile of second-generation Italian immigrants in German-speaking Switzerland (§.4). Finally, we will present and discuss the data and results of our study (§.5. and 6).

2. The phonological systems of bilinguals

With regard to the structure of phonological representations among bilinguals, Laeufer (1997) proposes a typology which is summarised in table 2.

This typology, which is based on Weinreich's (1953) seminal ideas on the structure of bilingual linguistic competence, proposes three main types of phonological systems, namely 'coexistent', 'super-subordinate', and 'merged' systems. The simultaneous acquisition of the two languages in different contexts is supposed to lead to coexistent systems, which function completely independently of one another. Foreign language learning in a formal setting is said to yield super-subordinate systems, where the encoding of the L2-phonology is heavily based on L1-representations. Finally, individuals learning two first languages at the same time may develop a merged system,

phoneme /dʒ/ (in this case: «g» before a back vowel). However, we will not focus our attention on this type of mistake, which is purely orthographic and not based on the subjects' phonological knowledge.

where one and the same phonological system is associated with different phonetic implementations for the two languages.

One of the purposes of the present study is precisely to test the validity of this model on the basis of our data.

3. Voiced and unvoiced obstruents in some varieties of German and Italian

Our hypothesis is that deviations in the spelling and pronunciation of Italian obstruents are mainly due to the different distribution of the features [±voice] and [±tense] in the four varieties which constitute the informants' repertoire (cf. §.4). Therefore, a brief outline of descriptive contrastive phonology is called for.

In both Standard German and Standard Italian, the feature [±voice] is distinctive, as can easily be shown by citing a number of minimal pairs. For instance, German maintains a lexical contrast between /'laɪtn̥/ "to lead" and /'laɪdn̥/ "to suffer", which rests on the phonemic opposition /t/ ~ /d/ (and, ultimately, on the two values of the feature [±voice]). The same is true of Standard Italian, as is indicated by the minimal pair /'mɔto/ "movement" ~ /'mɔdo/ "manner".

By complete contrast, Swiss German lacks voiced obstruents altogether, instead using an opposition between so-called 'fortis' and 'lenis' sounds (cf. Keller 1961:45-53), which we will refer to as 'tense' and 'lax' consonants, respectively[4]. As to the phonetic correlates of this dichotomy, measurements reveal a significantly longer duration of tense obstruents in Swiss German; moreover, no sonority bar appears on the spectrograms of the lax consonants (cf. Willi 1996:200-201). Minimal pairs such as /'ʃɒtə/ "shadow" ~ /'ʃɒd̥ɔ/ "harm" prove the phonemic status of the distinction /t/ ~ /d̥/. Note that, in both Standard Italian and Standard German, the fortis-lenis distinction is redundant, since, in these varieties, voiced obstruents are automatically lax, and unvoiced obstruents are automatically tense.

In sharp contrast to Standard Italian, in a number of regional varieties of central and southern Italy the feature [±tense] does not always accompany the feature [±voice], since, in these varieties, unvoiced obstruents do have lax allophones. More precisely, there are two allophonic rules which account for the distribution of these contextual variants[5].

4. The feature [±tense] is nowadays more common in phonological literature. Note, however, that when Jakobson/Halle (1964:100) extended the notions of 'tenseness' and 'laxness' from vowels to stops and fricatives, they were explicitly quoting Winteler's (1876) seminal work on Swiss German dialects and his remarks on the fortis-lenis pair. For the history of these concepts, see Braun (1988) and Jessen (1998).

5. For a more thorough discussion of lenition phenomena in Central and Southern Italy, cf. De Rosa/Schmid (2000).

The first rule, which applies to a wide range of central and southern varieties, changes an unvoiced obstruent into a lax one when it occurs between two vowels (cf. Canepari 1980:60-83, Schmid 1999:151).

(1) $\begin{bmatrix} -\text{ sonorant} \\ -\text{ voice} \\ +\text{ tense} \end{bmatrix} \rightarrow [\ -\text{ tense}\ ]\ /\ \text{V}\_\text{V}$

To illustrate this phenomenon, we may compare three examples of *Romanesco*, the dialect of Rome, e.g. [lo 'stu:b̥ido] "the fool", [a: 'd̥ɛ:ra] "the earth", and [a: 'g̊a:sa] "the house" with the corresponding Standard Italian forms /'stupido/, /'tɛrra/, /'kasa/ (cf. Loporcaro 1991: 280, 291).

The second rule – which applies only to southern Italy, not to the centre – converts an unvoiced obstruent into a lax one, if it occurs after a nasal (cf. Canepari 1980: 60-83, Schmid 1999: 152).

(2) $\begin{bmatrix} -\text{ sonorant} \\ -\text{ voice} \\ +\text{ tense} \end{bmatrix} \rightarrow [\ -\text{ tense}\ ]\ /\ \begin{bmatrix} +\text{ consonantal} \\ +\text{ nasal} \end{bmatrix}\_\_$

A Standard Italian expression like <tanto tempo> "much time" is likely to be pronounced, for instance in the variety of Naples, as ['tand̥ə 'd̥ɛmb̥ə] (personal observation, but cf. Canepari 1980: 72). An experimental study, carried out by Marotta/Sorianello (1992), on the Italian spoken in the province of Cosenza (Calabria) has revealed that rule (2) is variable, in the sense that the output can be not only a lax, but also a voiced consonant. This finding is relevant for our study, in so far as many of out informants have at least one parent who comes from this region (cf. §.5.1).

Table 3 summarises the distribution of the features [±voice] and [±tense] in the varieties involved.

From this scheme, we may derive several possibilities of structural reinterpretation within the bilingual phonological system. For instance, the lax allophones of the regional varieties may be associated with the voiced obstruents of Standard Italian, as in the examples quoted in the first and third lines of table (1). Hence, [rab̥ina'to:re] is spelled as «rabinatore» (instead of

Table 3 - The features [±voice] and [±tense] in the 4 varieties of the repertoire

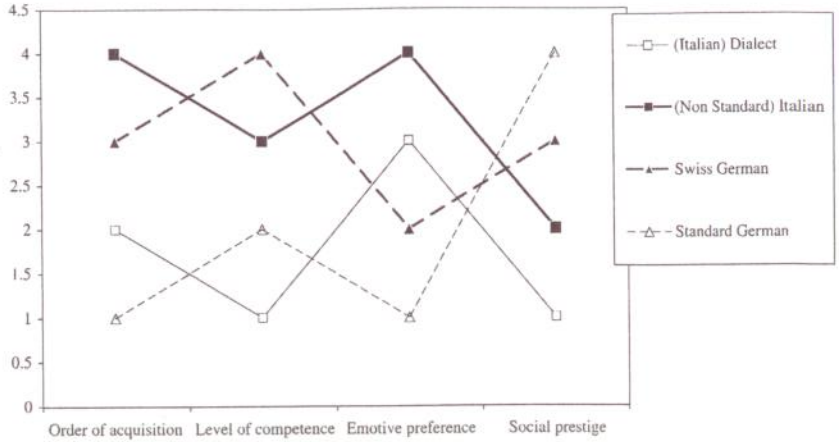
Italian & German (Standard)		*Swiss German*		*Regional varieties of Italian*		
/p/	/b/	/p/	/b̥/	/p/	[b̥]	/b/
– voice	+ voice	– voice	– voice	– voice	– voice	+ voice
+ tense	– tense	+ tense	– tense	+ tense	– tense	– tense

<rapinatore>), and the graphetic realisation of [a'tːɛndo] turns out to be «attendo» (instead of <attento>). Conversely, the voiced consonants may be regarded as mere variants of their unvoiced counterparts. In this case, illustrated in the second and fourth lines of table 1, we have an inverse application of allophonic rules (1) and (2), where the specification [–tense] is replaced by the value [–voice]. For this reason, we find hypercorrect forms like [la pitʃi'klɛtːa] and ['prɛnte], which, in turn, are spelled as «la picicleta» and «prente» (instead of <la bicicletta> and <prende>). Finally, it is also a possible that the Swiss German pattern will interfere, namely when the voiced Italian obstruents /b d g/ are equated with the lax ones [b̥ d̥ g̊]. This process, which is particularly common in the postsibilant context, is illustrated in the fifth line of table (1), where the spelling «spalio» (instead of <sbaglio>) reflects the devoiced pronunciation in ['sb̥aʎːo].

A few words about geminates are also called for. Geminates are phonologically distinctive in Italian, as is shown by the lexical contrast between <fato> /'fato/ "fate" and <fatto> /'fatto/ "made". By contrast, the double consonants of German orthography only constitute a graphemic means of signalling the phonologically distinctive quantity of the preceding vowel; this may be illustrated by means of the minimal pair <Bahn> /baːn/ "railway" ~ <Bann> /ban/ "ban". Again, such structural diversity between the two standard varieties can create some 'confusion' in our subjects, who indeed produce instances both of degemination and of (hypercorrect) gemination, as we have already illustrated in lines 6 and 7 of table 1: in fact, the word <giubbotto> of Standard Italian is pronounced by one of our subjects as [dʒu'bɔːto] and spelled as «guboto», whereas another informant realises the Standard form <piace> as ['pjatːʃe] and «piacce». As for Swiss German, the existence of geminates is open to debate (cf. Keller 1961: 46-49, Willi 1996: 18-19); we would suggest that the dialect spoken by our subjects lacks this correlation, instead using the feature [±tense], which, phonetically, is mainly based on a duration contrast. In a bilingual system, this coincidence may favour the reinterpretation of voiced geminates as tense singleton consonants, a phenomenon we have already observed in line 8 of table (1), with the example of <pioggia> realised as ['pjɔtʃa] and «piocia».

4. A sociolinguistic profile of second-generation Italian immigrants in German-speaking Switzerland

In sketching the typical linguistic biography of second-generation immigrants, we observe that (non standard) Italian is the dominant language in early childhood. In some families, an Italian dialect is also spoken at home, but parents generally prefer to bring up their children with a variety



which serves a wider range of communicative needs (i.e. Italian). The dialect of the host society, Swiss German, is normally acquired through communicative interaction with peers, for example at kindergarten, while standard German is taught later as a formal language at primary school. Thus, the children of Italian immigrants are faced with a double diglossia, namely that of their ethnic group (which opposes the Italian language to an Italian dialect) and that of the country they are living in, which embraces both Swiss German and Standard German. The structure of their repertoire can be characterized according to four parameters, which are indicated in table 4 (cf. Schmid 1992, 1993), namely: order of acquisition, level of competence, emotive preference and social prestige.

From the figure, it appears that Italian and Swiss German are the most important varieties in the repertoire, at least as far as order of acquisition and level of competence are concerned; moreover, code-switching between these two varieties, which are most frequently employed in everyday life, is a widespread phenomenon in peer-group communication. By contrast, the status of Standard German and Italian dialects is more peripheral in several respects (for instance, with regard to social prestige where they occupy the two opposite poles); in general, informants declare themselves to be less competent in these varieties, which are acquired later and are used relatively rarely. Nevertheless, it should be noted that parental dialects do have an influence on the regional accent of the children's Italian, and that literacy is much more developed in German than in Italian; in fact, our subjects receive only a few hours per week of formal education in their ethnic language. Finally, we must stress the fact that the emotive preference for the Italian varieties, both the standard language and the dialects, is very strong compared to the local varieties, Standard and Swiss German.

5. Results

5.1. *Data and methods*

In order to test the hypotheses outlined in §.3, we ran two experiments with a sample of 24 Italian bilinguals aged from 12 to 15 years. As to the regional provenance of these children, more than half of their parents originally lived in a relatively small area of the province of Cosenza, in the northern part of Calabria; in any case, the overwhelming majority of the parents came from southern Italy[6].

Data were collected during an Italian language course. 20 sentences were first written in a dictation exercise and subsequently recorded in a reading exercise. The sentences contained various obstruents occurring in 190 contexts, thus yielding a corpus of 9120 tokens. We then performed an error analysis of the dictations and an auditive analysis of the sentences read.

5.2. *The dictation exercise*

Table 5 gives an overall account of the spelling errors found in the dictation exercise. In this table, lines are ordered according to the phonemes under analysis, whereas the rows indicate the various phonotactic contexts: intervocalic and word-initial (#CV), postsibilant and word-initial (#SC), intervocalic both as single consonants and as geminates (VCV, VCCV), before and after liquids (VCCL, LC, CL), and after nasals (NC). Shaded areas denote impossible sound combinations.

It appears that the general degree of accuracy is rather high, resulting in a global error percentage of 5.13 %. However, there are certain segments and certain contexts which show a greater amount of deviation: in particular, the voiced bilabial plosive /b/ (13.97%) and the palato-alveolar fricatives /tʃ/ (13.43%) and /dʒ/ (16.67%). As to the various phonotactic positions, the percentage of errors is significantly higher with double consonants, amounting to 10.69% in the VCCV context and 50.00% in the the VCCL context: in the latter case, we note that the test-word <pubblicità> "advertising" was realised as «publicità» by half of our sample.

In fact, table 6 shows that the tendency towards degemination is three times as strong as the contrary process of gemination.

It is not clear to what extent the simplification of geminates is favoured by interference from the German varieties, since German orthography does at least have double consonants, even if they have only an indirect phonological motivation (cf. §.3). It could be that the lack of phonological geminates in both Standard and Swiss German triggers degemination in the Italian writing of the bilinguals. Nevertheless, we know that monolingual Italians with limited literacy also produce similar spelling errors[7], so the reduction of graphemic double consonants could also follow from a general, merely graphetic process of simplification: it requires less effort to write one letter instead of two. Also, in terms of phonological markedness relations, it is clear that geminates are more marked than singleton consonants.

As regards the opposite process of gemination, some examples such as «pratto» (instead of <prato> "meadow") might simply follow from a hypercorrect reaction against the tendency towards simplification. In other cases, however, gemination is phonologically motivated. In Standard Italian,

6. See De Rosa/Schmid (in press) for a more detailed sociolinguistic description of the informants.

Table 5 - Dictation exercise: spelling errors

	#CV	#SC	VCV	VCCV	VCCL	LC	CL	NC	Total	Contexts	%
/p/	2	3	10				2		17	624	2.72
/b/	8	10	7	18	12			2	57	408	13.97
/t/			9	20				4	33	1080	3.06
/d/	4		4			2	1	4	15	528	2.84
/k/	1		3	6			3		13	552	2.36
/g/	6	3							9	96	9.38
/ts/			5	10					15	240	6.25
/dz/				1		2		3	6	96	6.25
/tʃ/	8		9	7				5	29	216	13.43
/dʒ/	18			14				4	36	216	16.67
/s/				1				3	4	432	0.93
/z/									0	72	0.00
Total	47	16	47	77	12	4	6	25	234		
Contexts	1752	576	624	720	24	264	144	456	4560	4560	
%	2.68	2.78	7.53	10.69	50.00	1.52	4.17	5.48	5.13		

Table 6 - Dictation exercise : degemination and gemination

	p	b	t	d	k	g	tʃ	dʒ	ts	dz	s	*Total*
Degemination		30	19		5		14	7	8	3	1	87
Gemination	4	3	4	0	2		9		5	2	0	29

7. See De Rosa/Schmid (2000) and references quoted therein.

7.50% in the VCCV context, and, in sharp contrast to the spelling task, none in the case of <pubblicità> (cf. §.5.2).

However, there is no common explanation for the difficulty of the four affricates, since the deviations derive from different sources. In the case of /ts/, for instance, we must highlight the great number of 'deviations' in the word-initial context (#CV = 34), which is due to the lack of representativeness of the orthoepic norm. In fact, in accordance with the actual pronunciation of modern Italian, it is generally only /dz/ that occurs in this phonotactic position (cf. Schmid 1999: 148), and, not surprisingly, our informants realise the two test-words /'tsɪo/ "uncle" and /'tsukkero/ "sugar" mostly as ['dzi:o] and ['dzuk:ero]. On the other hand, we find that the postnasal context (NC = 79) is a major source of deviation (also for stops), a fact which may be related to the allophonic lenition rule (2). Finally, the difficulty in the pronunciation of the phoneme /dʒ/ – with 16 deviant realisations either in word-initial or in geminate position (#CV, VCCV) – might be a symptom of cross-linguistic influence from Swiss German (cf. §.5.2).

Since the variety of deviations is much broader in reading than in writing, we ordered them according to two different phonetic forces, namely weakening processes on the one hand, and strengthening processes on the other. Among the weakening processes, we considered not only voicing, lenition, and degemination (or shortening), but also a few cases of spirantisation and deaffrication. The strengthening processes also include occurrences of aspiration and affrication, along with the already familiar processes of devoicing and gemination (or lengthening). From a quantitative point of view, instances of weakening are twice as frequent as those of strengthening, since there are 238 examples of the first type against 120 of the second type (cf. tables 9 and 10).

Among the weakening processes, lenition and voicing clearly predominate, as emerges from table 9:

Table 9 - Reading exercise: weaking processes

	p	b	t	d	k	g	ts	dz	tʃ	dʒ	s	*Total*
Lenition	19	0	57	0	6	0	0	0	0	0	0	82
Voicing	2	0	11	0	6	0	55	0	11	0	4	89
Spirantisation	1	1	0	2	1	0	0	0	0	0	0	5
Deaffrication							0	0	19	0		19
Degemination	0	7	19	0	3	0	0	1	0	13	0	43
Total	*22*	*8*	*87*	*2*	*16*	*0*	*55*	*1*	*30*	*13*	*4*	*238*

In accordance with allophonic rule (1), we find 82 cases of intervocalic lenition in the pronunciation of words like [le 'p̬ɛ:kore] (for /le 'pɛ:kore/ "the sheep"), ['pra:d̬o] (for /'prato/ "meadow"), and ['fwɔg̬o] (for /'fwɔko/ "fire"). Similarly, a strong version of allophonic rule (2), which changes the feature [–voice] into [+voice] (cf. 3.), applies to 89 realisations like ['prɔndo] (for /'prɔnto/ "ready"), [kandʒe'l:i:no] (for /kantʃe'l:i:no/ "black board eraser"), and [*lo'rɛndzo] (for the first name /*lo'rɛntso/). These examples reveal the strong regional accent of the speakers, who faithfully reproduce the input probably received from their parents.

Another increasingly common feature of central and southern varieties of Italian is an allophonic rule which produces the deaffrication of intervocalic /tʃ/ (cf. Canepari 1980: 57, Schmid 1999: 150). This weakening process occurs, in our corpus, in 19 instances like [pub:liʃi'ta] (for /pubblitʃi'ta/ "advertising"), [biʃi'klet:a] (for /bitʃi'klet.ta/ "bicycle"), and ['diʃi] (for /'ditʃi/ "you say", sg.). Again, we are faced with a kind of 'deviation' from standard Italian that is not caused by interference from Swiss German, but which rather reflects the common pronunciation in large parts of Italy.

By contrast, the spirantisation of other obstruents like /p/, /b/, and /d/ does not belong to any of the linguistic models of our informants. Thus, the relatively few (only 5) realisations like ['tɔ:ɸo] (for /'tɔpo/ "mouse"), ['dɛ:βoli], (for /'deboli/ "weak", m.pl.) and ['daðo] (for /'dado/ "dice") must be considered a mere performance phenomenon without any influence from regional varieties of Italian or from Swiss German.

Yet, if we can so far attribute the non standard pronunciation of our informants to regional accent, the relatively high frequency (43 occurrences!) of degemination nevertheless raises a problem. This process is not attested in southern Italy, so that, in pronunciations like ['ga:to] (for /'gatto/ "cat"), ['tu:ti] (for /'tutti/ "all"), ['sako] (for /'sakko/ "bag"), we discover the influence of a phonological pattern of Swiss German, which, moreover, may reinforce the preference for simple consonants in spelling (cf. §.5.2).

If we now turn to the strengthening processes, we see from table 10 that devoicing is by far the most frequent deviation of this type (95 occurrences).

Table 10 - Reading exercise: strenghtening processes

	p	b	t	d	k	g	ts	dz	tʃ	dʒ	s	*Total*
Devoicing		11		28		10		15		31		95
Aspiration	2	0	4	1	1	0	0	0	0	0	0	8
Affrication	0	0	0	0	0	0					5	5
Gemination	0	8	1	0	0	0			3	0	0	12
Total	*2*	*19*	*5*	*29*	*1*	*10*	*0*	*15*	*3*	*31*	*5*	*120*

Phonetically, this process appears in two different forms. In the first case, it leads to devoicing and tensing, as is shown by the examples [pitʃi'klɛtːa] (for /bitʃi'kletta/ "bicycle"), ['prɛnte] (for /'prende/ "he/she takes"), and [*kabri'ɛːle] (for the first name /*ga'brjɛle/). In the second case, we find devoicing without tensing, as in ['sb̥aʎːo] (for /'zbaʎʎo/ "mistake"), in [dʒud̥i'karlo] (for /dʒudi'karlo/ "to judge him"), and in [*g̊a'brjeːle]. We might interpret the first case, i.e. devoicing and tensing, as a phenomenon internal to the Italian diasystem, namely a hypercorrect reaction against the allophonic lenition (or voicing) rules (1) and (2). On the other hand, devoicing without tensing rather points towards external interference, in the sense that voiced Italian obstruents are realised with their structural equivalents in Swiss German, namely unvoiced lax obstruents.

There are two additional elements which testify to the existence of a certain degree of interference from Swiss German. The first phenomenon consists in devoicing after a word-initial sibilant, as appears in the examples ['sb̥aʎːo] (for /'zb̥aʎʎo/ "mistake"), ['spaːte] (for /'zbatte/ "he/she beats", n.), and ['skwardo] (for /'zgwardo/ "look", n.). The second phenomenon concerns the devoicing of the phoneme /dʒ/, as in [tʃe'laːto] (for /dʒe'lato/ "ice cream"), [tʃatʃi'men̥di] (for /dʒatʃi'menti/ "deposits"), and [tʃuti'karlo] (for /dʒudi'karlo/ "to judge him"). Interestingly, we also find a few cases in which the voiced geminate /dʒdʒ/ is realised as a single tense and voiceless consonant /tʃ/ (cf. 1). Hence, in an example like [pro'tetʃe] (for /pro'tɛdʒ.dʒe/ "he/she protects"), the length of the Italian geminate is reinterpretated as the phonetic cue for the feature [±tense] of Swiss German.

Let us now say a few words about the other strengthening processes observed in the corpus, namely aspiration, affrication and gemination. Aspiration of unvoiced plosives in syllable-initial position is an allophonic rule of Standard German (cf. Wiese 1996: 270), but not of Swiss German (cf. Keller 1961: 49-50). It also appears in the periphery of southern Italy (cf. Canepari 1980: 74-83, Schmid 1999: 153), but none of the subjects who displayed the phenomenon come from this area. Therefore, we interpret the 8 occurrences of aspiration – such as ['pʰaːdre] (for /'padre/ "father"), ['tʰɔːb̥o] (for /'tɔpo/ "mouse"), and ['kʰaːne] (for /'kane/ "dog") – again as the result of a spontaneous process of phonetic performance. Quite differently, affrication of /s/ after sonorants is a wide-spread allophonic process in several regional varieties of Italian (cf. Canepari 1980: 59, Schmid 1999: 154). Nevertheless, our corpus contains only 5 examples of this process; see, for instance, the two realisations of /in̥sɛtti/ ("insects"): [in'tsɛtːi] and [in'dzɛtːi] (with additional postnasal voicing in the latter case).

Gemination does not appear very frequently in the reading task, if we compare its 12 occurrences with the 43 instances of degemination. Moreover, this phonological process has two possible explanations: in realisations such

as [pro'tːɛdːʒe] (for /pro'tɛdʒdʒe/ "he/she protects") and ['pjatːʃe] (for /pjatʃe/ "he/she likes") we are probably dealing with a hypercorrect reaction against the above-mentioned shortening of long consonants. Conversely, the pronunciation of [dɛbːoli] (for /'deboli/ "weak" m.pl.) and [*a'rabːja] (for /*a'rabja/) is a clear demonstration of regional accent, since, in southern Italy, intervocalic /b/ is always long; this phonotactic restriction also emerges in the dictation exercise (cf. §.5.2).

6. Conclusion

In trying to summarize the results of our analysis, we are faced with the difficulty of classifying the phonological system of these bilinguals according to Laeufer's typology (cf. §.2). Also considering the individual differences among the informants, we prefer to conceive of this typology in terms of a continuum rather than in terms of clear-cut categories such as 'coexistent', 'super–subordinate', and 'merged'.

Basically, we think that the two systems are largely kept distinct and may, therefore, be regarded as 'coexistent'. In fact, we have detected a major source of difficulty, both for spelling and for pronunciation, in the allophonic lenition rules (1) and (2) of the southern Italian varieties. There are two opposite expressions of this difficulty, namely close adherence to the phonological rules of intervocalic and postnasal lenition/voicing on the one hand, and a hypercorrect reaction against this tendency, which leads to devoicing, on the other. Moreover, we have found additional evidence for the strong regional accent of the informants, in particular the deaffrication of intervocalic /tʃ/, the affrication of postnasal sibilants, and the gemination of intervocalic /b/. On the whole, 'deviations' from orthoepic and orthographic norms are mainly due to the phonological representations of regional varieties of southern Italian and, ultimately, to a particular type of native accent.

As for the general tendency towards degemination, we must distinguish between spelling and reading: in the former case, it may be due to a general graphetic process of simplification, whereas in the latter case, we might be faced with interference from Swiss German. In spite of the fundamental separateness of the two linguistic systems, there are indeed some patterns of Swiss German that interfere in the phonological representations of the Italian language. Such cross-linguistic influence shows up as devoicing, mainly in the case of the phoneme /dʒ/ and with word-initial sibilant clusters (#SC). Indirectly, the different phonological status of the feature [±tense] in Swiss German may also, to some extent, increase the instability of the bilingual phonological system.

Finally, we might even recognise some elements of a merged system, for instance in pronunciations like [tʃuḍi'ǧarlo] (for /dʒudi'karlo/ "to judge him"). In this word, the two lax plosives have different phonological derivations: [ḍ] is devoiced according to the Swiss German pattern, whereas [ǧ] is the outcome of the southern Italian lenition rule (1).

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Abstracts

1. Archibald J., *Charting the learning path in second language phonology: The acquisition of OT grammars*

In questo articolo si discute l'efficacia dell'applicazione del modello teorico dell'ottimalità fonologica (*Optimality Theory*, OT) allo studio dei dati di fonologia interlinguistica.

Nel modello ottimalista (cf. Prince/Smolensky 1993), la grammatica è concepita come un sistema di restrizioni sulla forma dell'output, gerarchicamente ordinate in una scala di preferenze. Di conseguenza l'acquisizione della seconda lingua può essere intesa come un processo di ristrutturazione di tale sistema di restrizioni, ossia come un'operazione di ri-ordinamento (*re-ranking*) dei parametri in seguito al contatto con le preferenze espresse dalla L2. Ciò che rimane implicito in questo quadro è l'effettivo percorso che l'apprendente dovrebbe seguire per arrivare alla riorganizzazione del sistema secondo le norme del *target*, dal momento che vari possono essere i cambiamenti (nel sistema dei parametri) che modifichino l'output nella forma desiderata. La questione viene anche collegata al problema dell'evidenza negativa indiretta, a cui gli apprendenti adulti di una seconda lingua sembrano essere sensibili. Come possibile soluzione a tali quesiti viene suggerito di considerare l'acquisizione come processo *cue-based*, ossia basato sull'individuazione da parte dell'apprendente di tracce rilevanti per le proprietà di un parametro.

Il lavoro si colloca nel quadro delle recenti riflessioni sull'importanza dei meccanismi di innesco (*triggers*) delle forme dell'output (cf. Lightfoot 1999), campo a cui lo studio dell'acquisizione della seconda lingua sembra poter fornire contributi importanti.

2. Behne D.M., P.E. Czigler & K.P.H. Sullivan, *Perception of Swedish vowel quantity by native and British English listeners*

Alcuni errori nella percezione di non-nativi possono essere spiegati come risultato di fenomeni di *transfer* dalla lingua nativa, altri sembrano essere riconducibili a preferenze universali, come l'uso della durata per la categorizzazione delle vocali, in quei casi in cui lo spettro non fornisce sufficienti tracce (*cues*) percettive ad un soggetto non-nativo. Nello studio specifico, si osserva il modo in cui parlanti nativi di

A cura di
Lidia Costamagna
Stefania Giannini

LA FONOLOGIA DELL'INTERLINGUA

Principi e metodi di analisi

FRANCOANGELI